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Spec No: 002-05070

Spec Title: AN205070 - F2MC-8FX Family MB95390 Series 120 degree Hall Sensor/Sensorless DC Inverter Control

Replaced by: NONE

AN205070

F²MC-8FX Family MB95390 Series 120° Hall Sensor/Sensorless DC Inverter Control

Associated Part Family: MB95390 Series

This Application Note describes the implementation of 120° conduction hall sensor/sensorless brushless DC motor control using the Cypress MB95F390 8-bit microcontroller EV board and MB95F330 EV board together.

Contents

1 Introduction

This document describes the implementation of 120° conduction hall sensor/sensorless brushless DC motor control using the Cypress MB95F390 8-bit microcontroller EV board and MB95F330 EV board together.

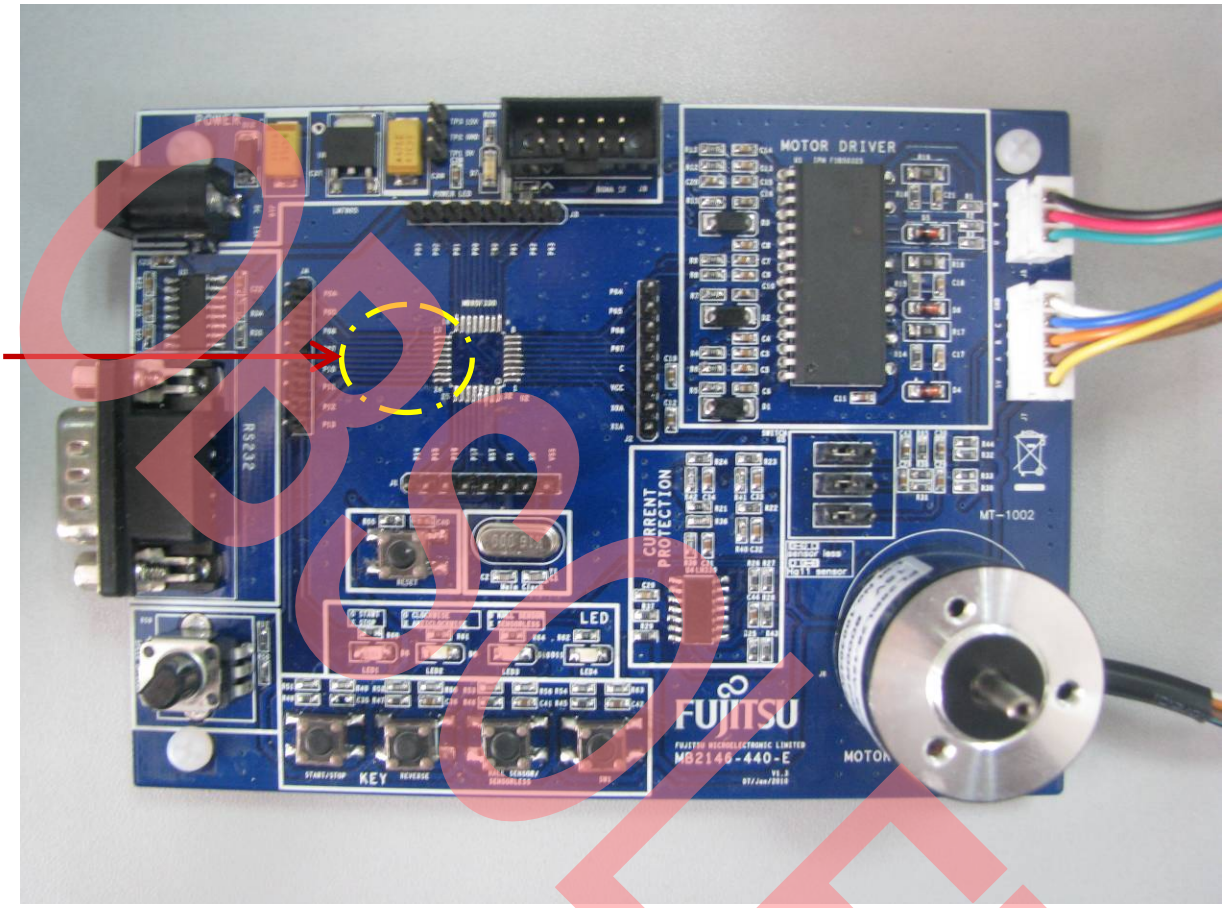
2 Hardware Connection

This chapter introduces hardware connection when MB95390 EV board is used with MB95330 EV board.

2.1 Prepare MB95330 EV Board

The MB95330 EV board PN is MB2146-440-E. It should be removed before connected with MB95390 EV board. Refer to Figure 2-1.

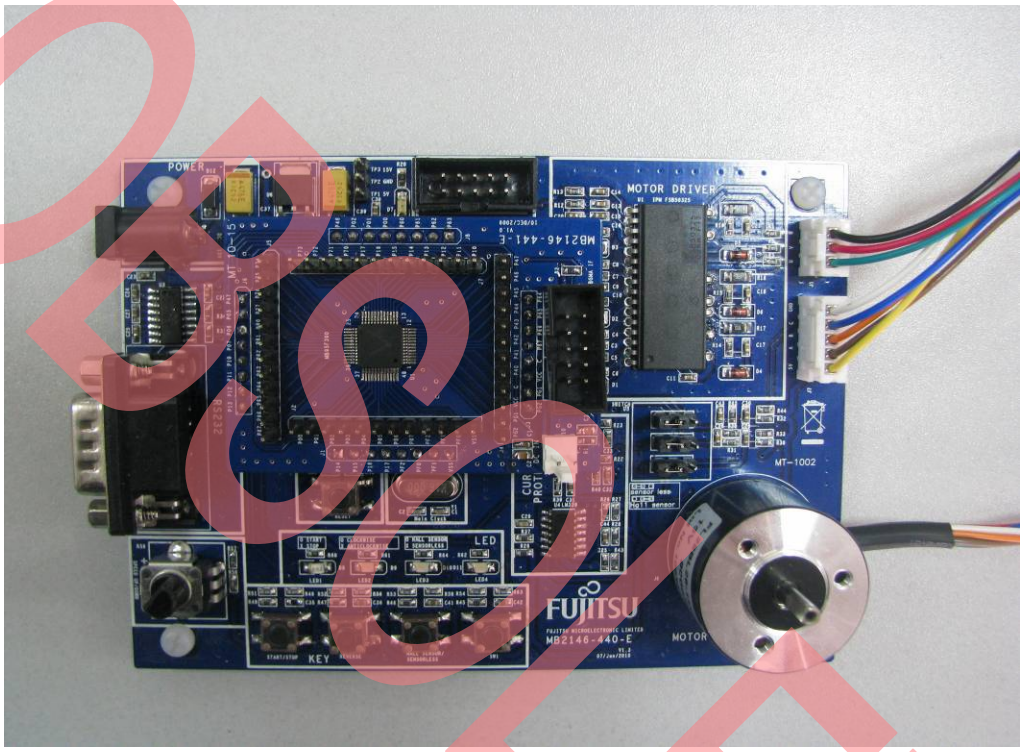
Figure 2-1: MB95330 EV Board



2.2 Install the MB95390 EV Board onto the MB95330 EV Board

The MB95390 EV board PN is MB2146-441-E. Install the MB95390 EV board onto the MB95330 EV board, refer to Figure 2-2.

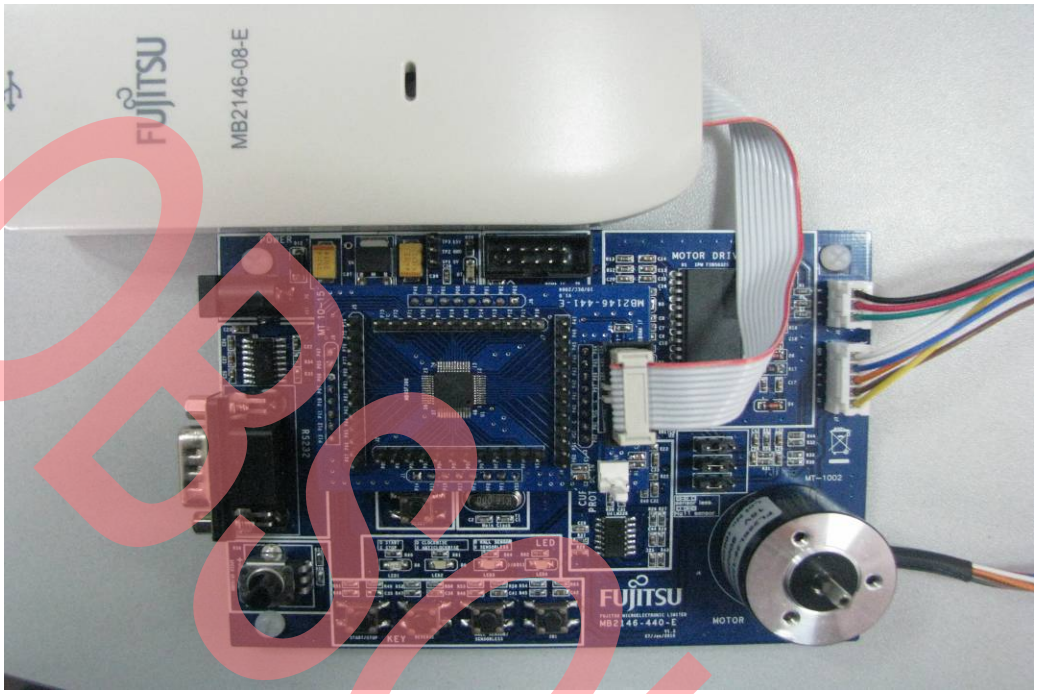
Figure 2-2: Install MB95390 EV Board onto MB95330 EV Board



2.3 Connect BGMA to EV Board

Connect BGM Adaptor (BGMA) to EV board. It should be connected to MB2146-441-E's BGMA IF or MB21440-E's BGMA IF. Refer to Figure 2-3

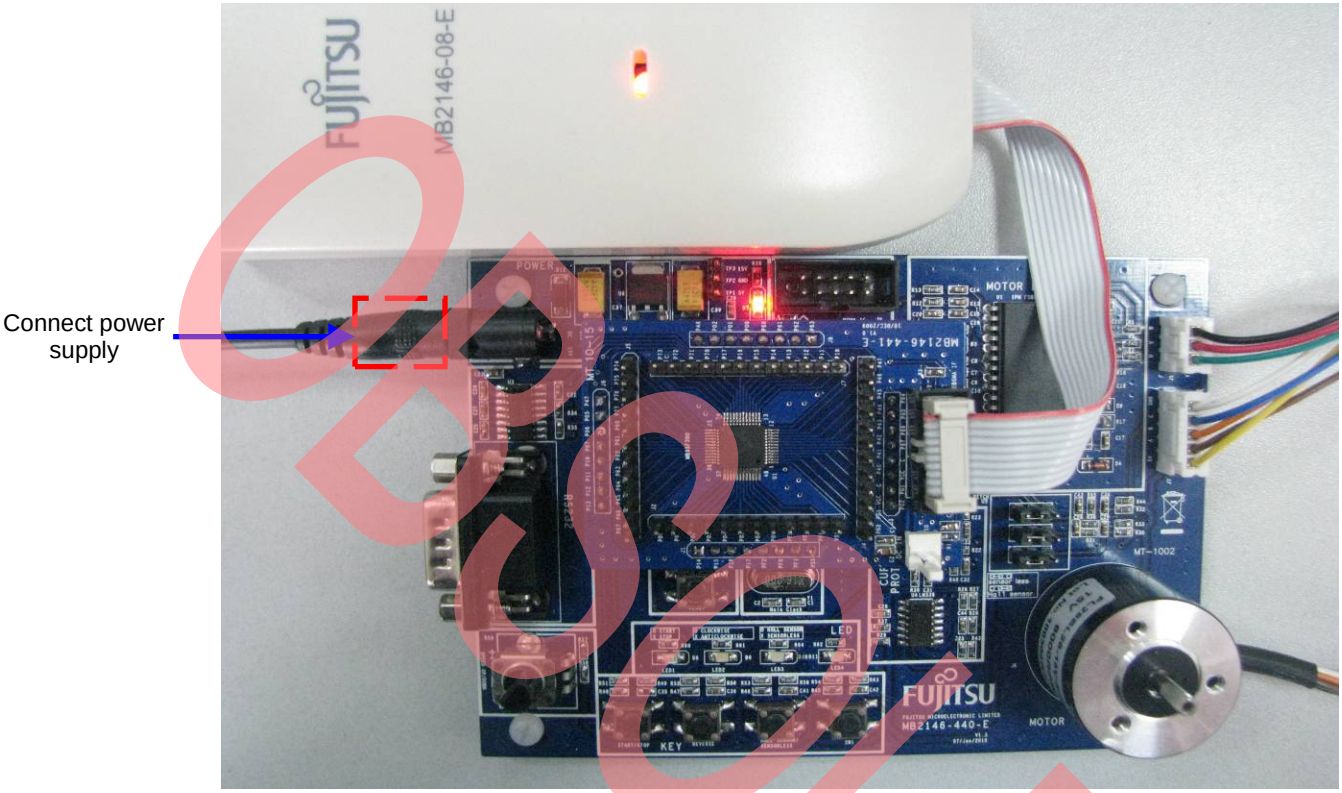
Figure 2-3: Connect BGMA to EV Board



2.4 Power on the EV Board

It should be used MB2146-440-E's power supply and power connector. The power supply is DC 15V, 2A. Refer to Figure 2-4.

Figure 2-4: Connect power supply



3 EV Board Operation

3.1 FW Operation

Open the “MB95390 Motor Drive V1.0.prj”, which can be found on MB2146-441-E’s CD-ROM.

- Compile project
- Start debugging
- Run (code update)
- End debugging

Note: The MB95390 motor drive library’s usage is the same as MB95330 motor drive library. Please refer to “MCU-AN-500067-E-13”.

3.2 HW Operation

About HW operation, it includes the following operations:

- Select the driving method as hall sensor or back EMF
- Start/Stop motor
- Adjust motor speed
- Reverse motor rotation

Note: The operation method is the same as MB95330 EV Board User Manual. Please refer to “MCU-AN-500070-E-14”.

4 Additional Information

Please contact your local support team for any technical question.

Document History

Document Title: AN205070 - F²MC-8FX Family MB95390 Series 120° Hall Sensor/Sensorless DC Inverter Control

Document Number: 002-05070

Revision	ECN	Orig. of Change	Submission Date	Description of Change
**	—	HUAL	04/22/2010	Initial release
*A	5260200	HUAL	9/14/2016	Migrated Spansion Application Note “MCU-AN-500094-E-10” to Cypress format. Document obsoleted

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